

Notice of Allowability

Application No.

10/797,399

Examiner

Shih-Chao Chen

Applicant(s)

ISAACS ET AL.

Art Unit

2821

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to the I.D.S. filed on July 18, 2005.
2. ☒ The allowed claim(s) is/are 1-17.
3. ☐ The drawings filed on _____ are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
6. ☒ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☒ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date 3/10/04, 7/18/05
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____.
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

Shih-Chao Chen
SHIH-CHAO CHEN
PRIMARY EXAMINER

DETAILED ACTION

Drawings

1. Figure 1-4 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated.

Allowable Subject Matter

2. Claims 1-17 are allowed.
3. The following is an examiner's statement of reasons for allowance:

The primary reason for the allowance of claims 1-6 is the inclusion of the limitation of a 3D region of the 3D array behaves as a metamaterial at a frequency when the circuit elements of the 3D region are in one set of circuit states and behaves as a normal refractive medium at the same frequency when the circuit elements of the 3D region are in another set of circuit states. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which make these claims allowable over the prior art.

The primary reason for the allowance of claims 7-13 is the inclusion of the limitation of the refractive medium includes a 3D region capable of transforming between first and second states, the 3D region being a metamaterial at the wireless communication frequency when in the first state and being a normal refractive medium at the wireless communication frequency when in the second state. It is this limitation found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which make these claims allowable over the prior art.

The primary reason for the allowance of claims 14-17 is the inclusion of the method step of transmitting optical or electrical control signals to transform a region of a 3D medium from being in a normal refractive state at a selected frequency to being in a metamaterial state at the frequency. It is this step found in each of the claims, as it is claimed in the combination, that has not been found, taught or suggested by the prior art of record which makes these claims allowable over the prior art.

Gilbert (U.S. Patent No. 6,865,402) teaches a tower structure has an antenna array disposed on the top thereof to provide omni-directional or sectorized coverage. One or more feedlines are used to connect antenna array to a receiver/transmitter. Antenna array can include one or more RF-actuated MEMS switches. These MEMS switches are actuated by an RF signals generated at an RF signals source and upwardly fed through a horn antenna. However, Gibert does not disclose or suggest a 3D region of the 3D array behaves as a metamaterial at a frequency when the circuit elements of the 3D region are in one set of circuit states and behaves as a normal refractive medium at the same frequency when the circuit elements of the 3D region are in another set of circuit states.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Correspondence

Art Unit: 2821

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shih-Chao Chen whose telephone number is (571) 272-1819. The examiner can normally be reached on Monday-Friday from 7 AM to 4:30 PM, First Fri. off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Don Wong can be reached on (571) 272-1834. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Shih-Chao Chen
Primary Examiner
Art Unit 2821

Shih-Chao Chen
SHIH-CHAO CHEN
PRIMARY EXAMINER

SXC
August 24, 2005